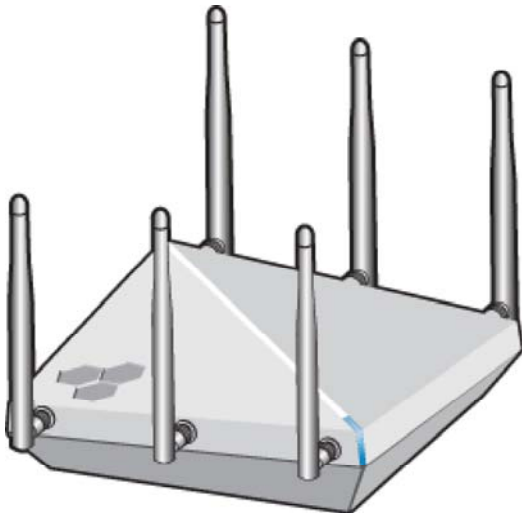


Aerohive AP245X Hardware User Guide

Read about and view specifications for the AP245X in this topic. Install the AP245X using this topic.



The AerohiveAP245X external-antenna AP features 802.11ac Wave 2 dual radio, 3x3:3 [MU-MIMO](#) with data rates up to 1.3 Gbps per radio using existing 802.3af PoE infrastructure. Software-defined radio allows IT managers to enable 802.11ac performance on both radios for the best coverage and capacity Wi-Fi and investment protection. Built-in [BLE](#) provides proximity, indoor location tracking, and other location-based mobile engagement services. The AP245X has the power to support enterprise-grade features, including built-in application visibility and control, RADIUS authentication, DHCP, captive web portals, location services and spectrum analysis.

For more information about Aerohive APs in general, see ["Introduction to Aerohive APs"](#)

Important! Changing the Country Code

If your access point is configured for the World Regulatory Domain, it is important to set the country code to the country in which the AP will be deployed to meet regulatory requirements and for optimal wireless operation. To do this, follow these steps:

For Devices Running HiveManager:

1. Power on the AP and allow it to find and connect to HiveManager. Once the AP is connected, it appears in the table of unconfigured devices on the *Monitor > Devices* page and is categorized as New under the Management Status table header.
2. Select the check box for the AP, and then choose **Update > Advanced > Update Country**.
3. On the *Update Country Code* page, choose the appropriate country code from the drop-down list, and then click **Upload**.

For Devices Running HiveManager NG:

1. Power on the AP and allow it to find and connect to HiveManager NG. Once the AP is connected it appears in the table of devices on the *Monitor > Devices* page.
2. Select the check box next to the AP, and then choose **Assign Country Code** from the *Actions* drop-down list. In the dialog box that appears, select the appropriate country from the drop-down list and then click **Save**.
3. Upload your changes to the device.

Regulatory Compliance Statements

The regulatory compliance statements in this section apply to Aerohive AP245X devices.



For Japan, the AP245X is restricted for indoor use in the 5150-5350 MHz band only.

Compliance Statements

The following compliance information applies to AP245X devices.

R&TTE and Low Voltage Directives

This device is compliant with the following directives:

- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC

AP245X Compliance Statement - Europe

EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN 60950-1:2009 2006+A2:2013

Safety of Information Technology Equipment

EN 62311: 2008 / Article 3(1)(a) and Article 2 2006/95/EC

Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz-300 GHz)

EN 300 328 V1.9.1: 2015-02

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating using wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

EN 301 893 V1.8.1: 2015-03

Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

EN 301 489-1 V1.9.2: 2011

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-17 V2.2.1 2012

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

- **Česky [Czech]:** [Aerohive] tímto prohlašuje, že tento [AP245X] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
- **Dansk [Danish]:** Undertegnede [Aerohive] erklærer herved, at følgende udstyr [AP245X] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
- **Deutsch [German]:** Hiermit erkläre [Aerohive], dass sich das Gerät [AP245X] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
- **Eesti [Estonian]:** Käesolevaga kinnitab [Aerohive] seadme [AP245X] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
- **English:** Hereby, [Aerohive], declares that this [AP245X] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
- **Español [Spanish]:** Por medio de la presente [Aerohive] declara que el [AP245X] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
- **Ελληνική [Greek]:** ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [Aerohive] ΔΗΛΩΝΕΙ ΟΤΙ [AP245X] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
- **Français [French]:** Par la présente [Aerohive] déclare que l'appareil [AP245X] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
- **Italiano [Italian]:** Con la presente [Aerohive] dichiara che questo [AP245X] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
- **Latviski [Latvian]:** Ar šo [Aerohive] deklarē, ka [AP245X] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
- **Lietuvių [Lithuanian]:** Šiuo [Aerohive] deklaruoją, kad šis [AP245X] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
- **Nederlands [Dutch]:** Hierbij verklaart [Aerohive] dat het toestel [AP245X] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
- **Malti [Maltese]:** Hawnhekk, [Aerohive], jiddikjara li dan [AP245X] jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
- **Magyar [Hungarian]:** Alulírott, [Aerohive] nyilatkozom, hogy a [AP245X] megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
- **Polski [Polish]:** Niniejszym [Aerohive] oświadczam, że [AP245X] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
- **Português [Portuguese]:** [Aerohive] declara que este [AP245X] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

- **Slovensko [Slovenian]:** [Aerohive] izjavlja, da je ta [AP245X] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
- **Slovensky [Slovak]:** [Aerohive] týmto vyhlasuje, že [AP245X] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
- **Suomi [Finnish]:** [Aerohive] vakuuttaa täten että [AP245X] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

EU Radiation Warning Statement

To meet radiation exposure requirements, these devices should be installed at a minimum distance of 9.05" (23 cm) from people or animals.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the antenna of the receiving devices.
- Increase the separation between this equipment and receiving equipment.
- Connect this equipment into an outlet on a circuit different from that to which the receiving equipment is connected.
- Consult the dealer or an experienced radio or TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 23 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/CANADA

Industry Canada Statement:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause interference, and
- This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- l'appareil ne doit pas produire de brouillage, et
- l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution:

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

Avertissement:

(i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 32 cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 32 cm de distance entre la source de rayonnement et votre corps.

Taiwan Compliance Information

Aerohive AP245X

第十二條→經型式認證合格之低功率射頻電機，非經許可，公司，商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條→低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

在 5.25-5.35 兆赫頻帶內操作之無線資訊傳輸設備，限於室內使用。

無線資訊傳輸設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。











Taiwan MPE Warning

電磁波曝露量MPE標準值(MPE) 1mW/cm² , 送測產品實值為0.734 mW/cm²

Safety Guidelines

The information in this section applies to AP245X devices.

The following safety icons are used in these guidelines to identify the type of precaution:

	This icon indicates a general caution. Failure to comply with a caution notification can result in damage to equipment.
	This icon indicates an electrical caution. Failure to comply with an electrical notification can result in serious injury or death, and extensive damage to equipment.
The following table lists the safety precautions you should follow when installing your AP245X.	
	Aerohive devices must be installed by a professional installer who is certified to install these types of devices and to ensure that they are properly grounded and meet applicable local and national electrical codes.
	These devices are intended for indoor use only.
	Do not install the device in an environment where the operating ambient temperature might exceed the recommended ranges.
	Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room where you install your device has adequate air circulation.
	Changes or modifications made to this device that are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
	Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when handling electronic equipment and components.
	Never assume that power is disconnected from a circuit; always check the circuit.
	To meet radiation exposure requirements in all countries, these devices should be installed at a minimum distance of 12.6" (32 cm) from people. See individual country warning for country-specific distances, if required.



All Ethernet and RS232 (console) ports and the cables attached to them are designed for intra-building connection to other equipment. Do not connect these ports directly to wiring that exits the building where this appliance is located

Installing the AP245X

The following sections describe how to install your Aerohive AP245X devices, connect them to the network, and start managing them in HiveManager NG.

Shipping Carton Contents

The AP245X access point shipping carton contains the following items:

- AP245X chassis
- Aerohive Generic QuickStart Guide
- Hardware accessories kit containing:
 - 3 wall-mount screws and three wall anchors
 - Wall-mount or diagonal ceiling mounting bracket

Antennas are sold separately. (Aerohive SKU AH-ACC-DB-5-ANT-KIT, 6 dual-band 5 dBi articulated indoor antennas)

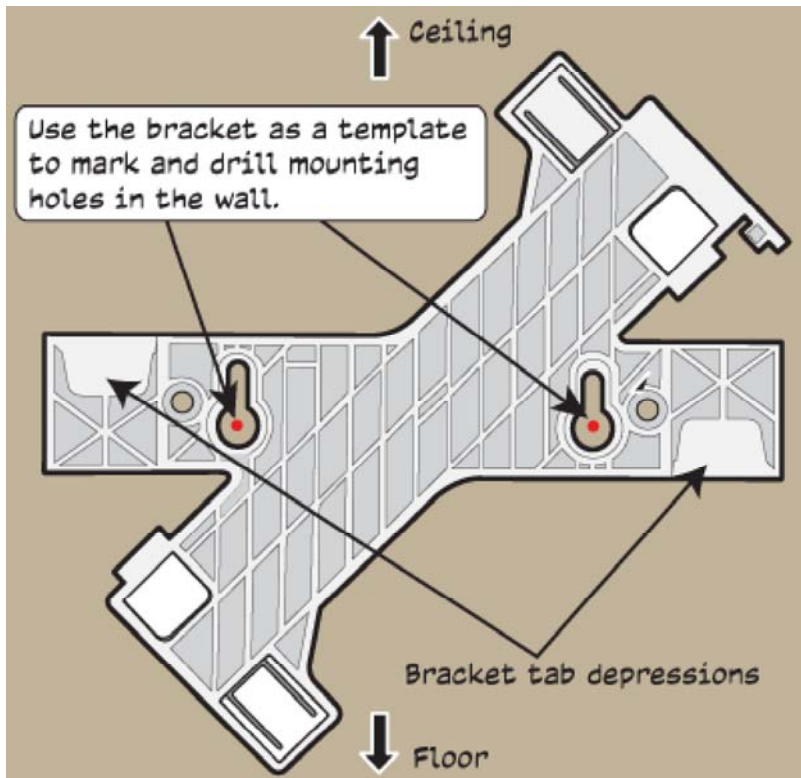
Mounting the AP245X

You can mount the AP245X on a flat surface, a wall, or to the tracks of a dropped ceiling grid. The following sections describe these installation methods.

Wall or Non-dropped Ceiling Mount

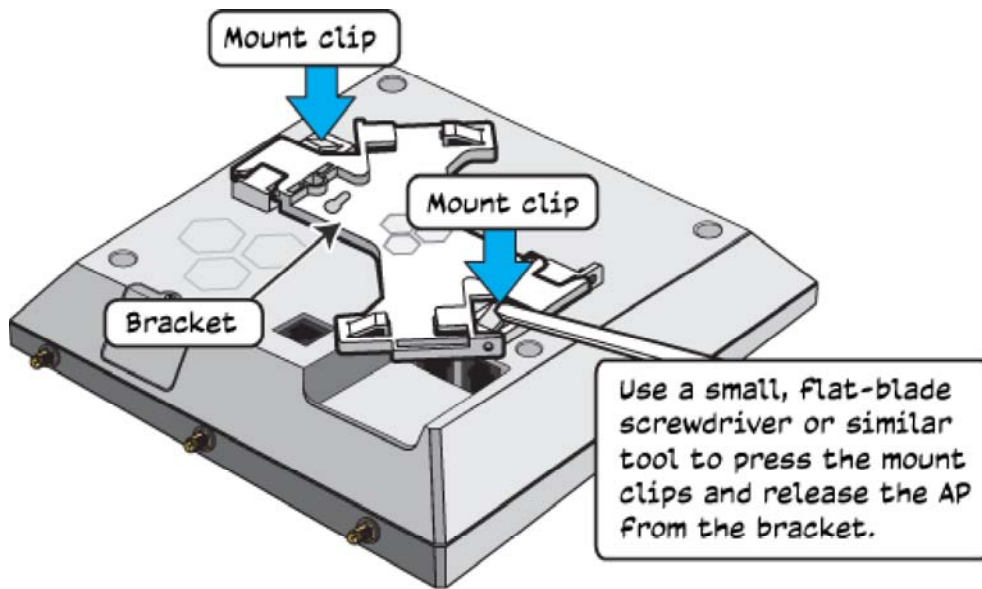
Attach the AP245X to any vertical or horizontal surface that will support its weight (1.6 lb, or 0.73 kg), and to which you can install wall mount screws. Use the following procedure.

1. Use the bracket keyholes as a template to mark the mounting hole locations, and drill two corresponding holes in the wall or drywall ceiling.



2. Install two wall mount screws (and plastic anchors if necessary). Leave the screw heads far enough away from the wall so that the bracket will slip over them (you can test this using the bracket). If you are connecting the device to cables from inside the wall, drill an access hole in the wall for the cables, if necessary.
3. Attach the device to the bracket by lining up the mount tabs on the bottom of the device with the corresponding mount tab depressions on the bracket (see illustration above). Slip the device tabs under the edges of the bracket tab depressions and rotate the device until it clicks into place on the bracket.
4. Mount the device on the wall or ceiling by slipping the bracket keyholes over the screw heads and sliding the screws into the narrow part of the keyhole.

(i) To remove the device from the bracket, use a small flat-blade screwdriver or similar tool to depress the mount clips on the bottom of the device and release it from the bracket, as shown in the illustration.



Dropped Ceiling Track Mount

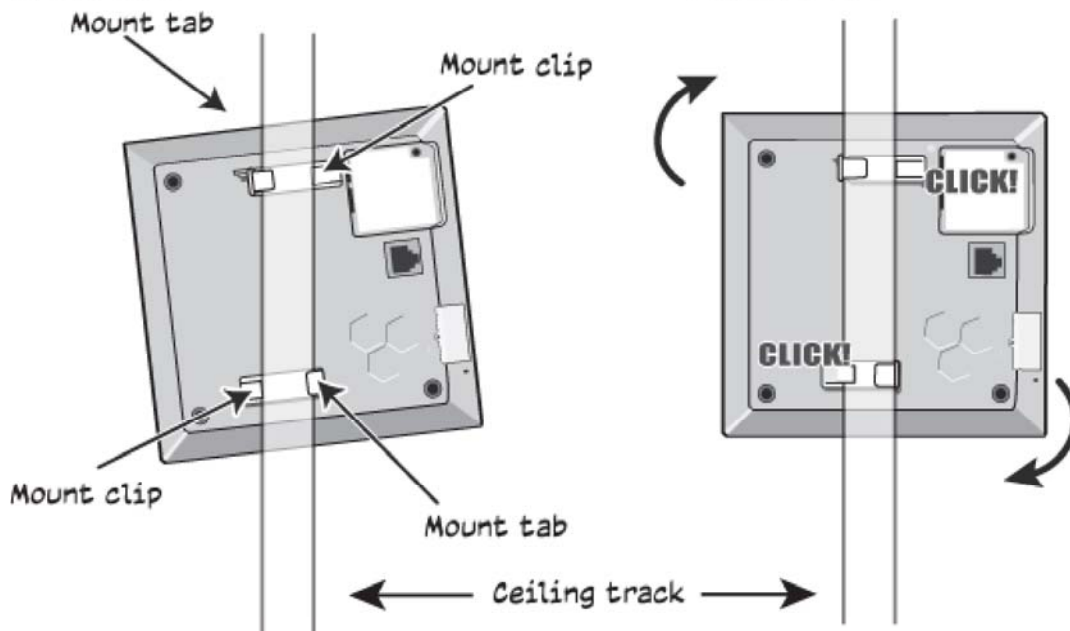
You can mount the AP245X in either a square or diagonal position on a standard 15/16"-wide track (2.38 cm) in a dropped ceiling. A diagonal mount requires the diagonal mount bracket that ships with the device. This section describes how to do both installations.

Square Dropped Ceiling Track Mount

Slip the mount tabs over the edges of the ceiling track as shown in the illustration, then rotate the device slightly until the mount clips click into place over the track edges.

Press the device against the ceiling track and slip the edges of the track under the mount tabs.

Rotate the device until the mount clips snap onto the ceiling track.



(i) You can also mount these devices to non-standard or recessed dropped ceiling tracks using brackets designed for 9/16" (1.34 cm) tracks. These brackets can be ordered from Aerohive (AH- ACC-BKT-80211AC-KIT).

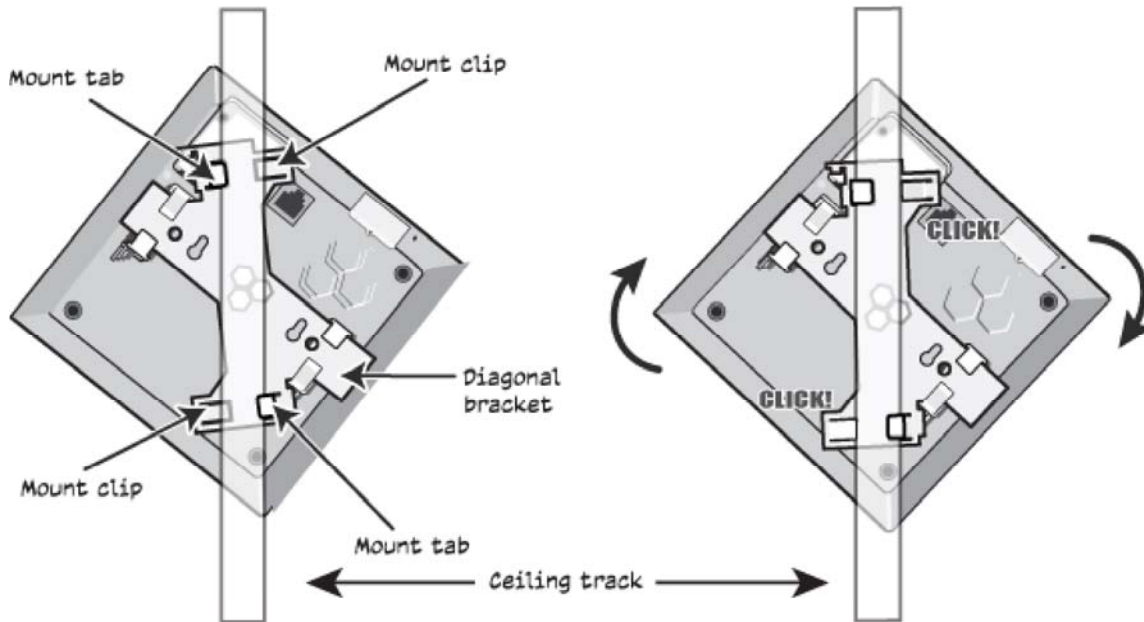
Diagonal Dropped Ceiling Track Mount

Follow these steps and the illustration to mount an AP245X in the diagonal position on a standard dropped ceiling track.

1. Attach the diagonal bracket to the device by slipping the mount tabs on the device over the plain edges of the diagonal bracket.
2. Rotate the bracket until the mount clips on the device click into place over the bracket edge.
3. Hold the device upside down and slip the mount clips on the diagonal bracket over the edges of the ceiling track. Because you are installing the device from below, it is helpful to use your fingertips to identify the location of the mounting tabs by touch.
4. Press the device gently against the track and rotate it until the mount clips click into place.

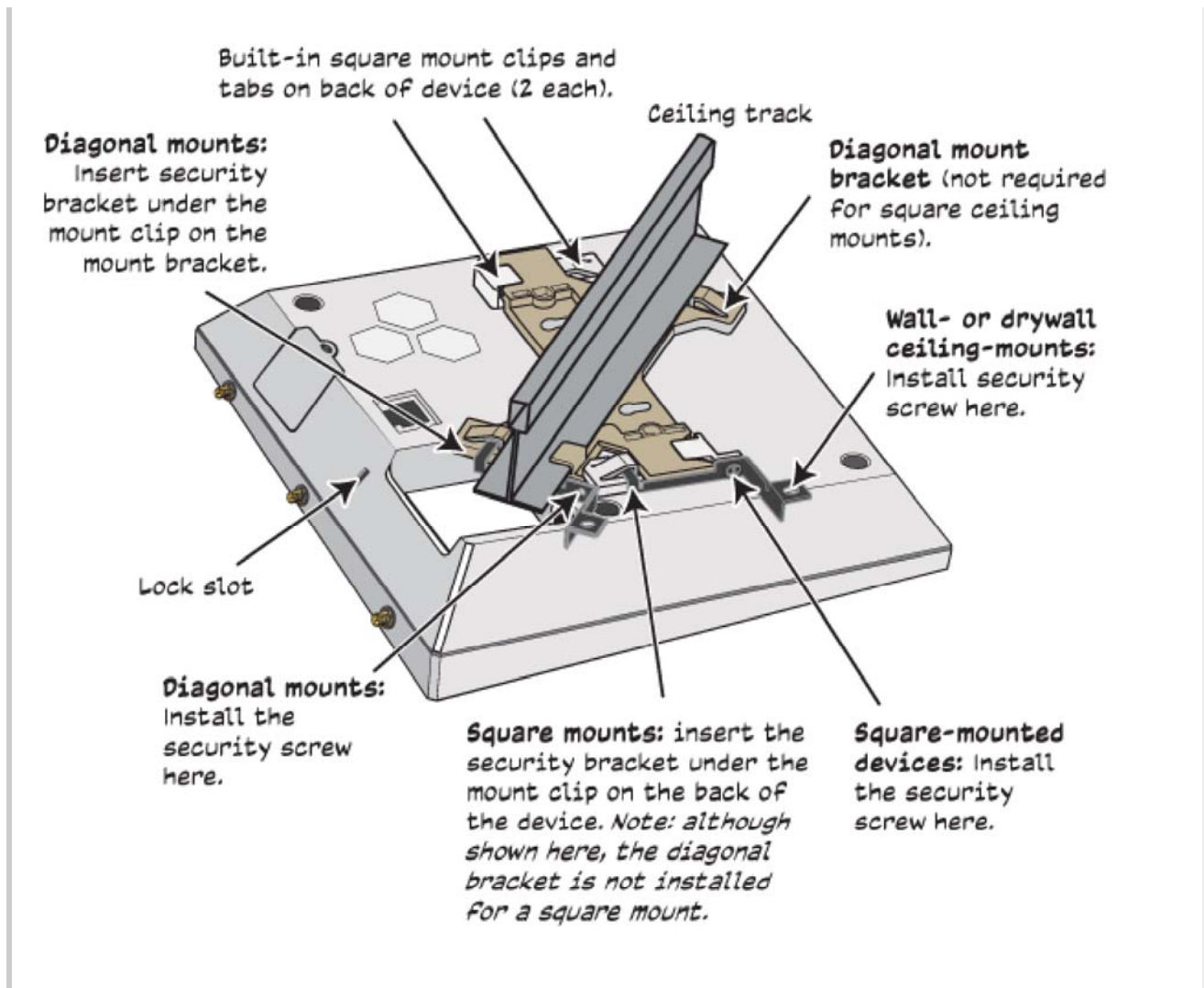
Press the device and bracket assembly against the ceiling track and slip the edge of the track under the mount tabs on the bracket.

Rotate the device until the mount clips snap onto the ceiling track.



Securing the AP245X

You can secure the AP using a Kensington® lock in the lock slot on the side of the device, or you can order a security bracket kit (AH-ACC-SEC-KIT-80211AC) to secure it to a ceiling track or to a wall, as shown in the illustration below. For more information, contact your Aerohive sales representative.




Connecting the AP245X

Follow these steps to connect your AP245X to power and to the network.

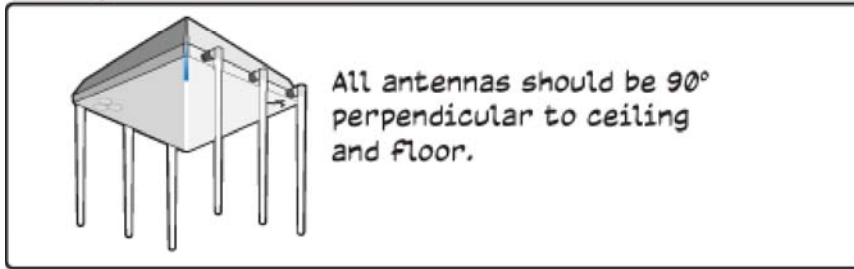
1. Connect a standard RJ45 Ethernet cable from ETH0 on the AP to a switch that provides PoE power, or use a PoE injector (see "Ethernet Ports").
2. After the AP receives power, it automatically tries to get network settings and contact your HiveManager management platform. This process takes about five minutes. When you see the AP listed on the *Devices* page in the *Monitor* section of the management GUI, the initial setup is complete and you can begin managing the AP.

Antenna Alignment

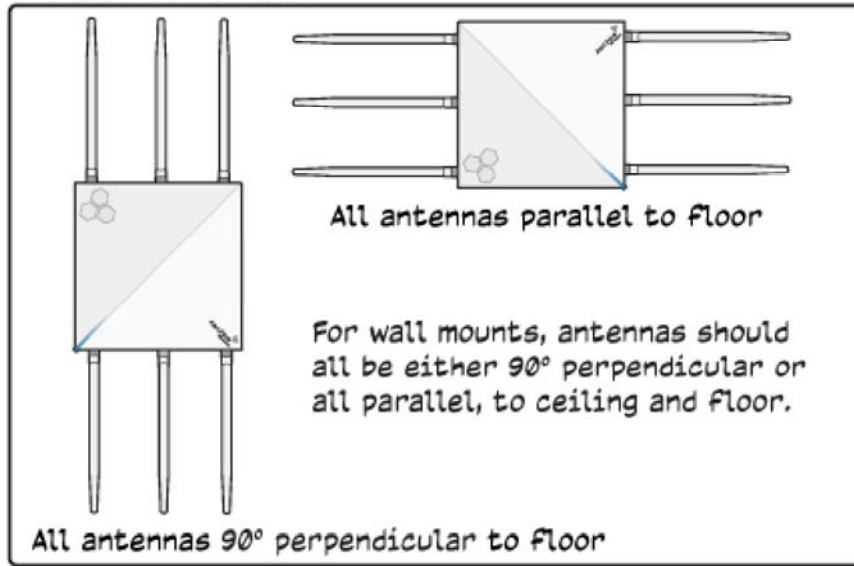
For optimum reception, align the antennas as shown below, depending on how the device is mounted.

 Leave at least 12" (30 cm) of space around the antennas that is clear of any large metal objects. Metal can distort antenna reception.

Ceiling mounted devices



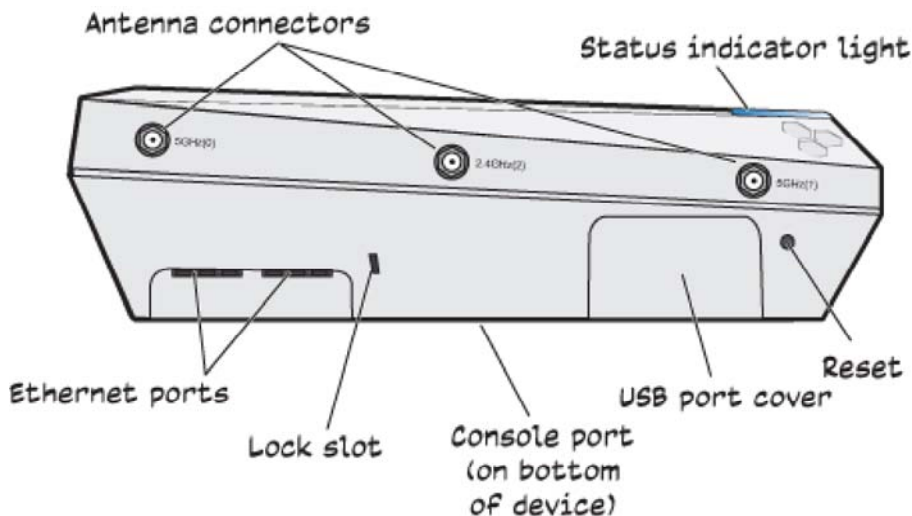
Wall mounted devices



Hardware Components

You can see the hardware components of the AP245X in the illustration below and read about them in the sections that follow.

(i) To meet federal radiation exposure requirements, these devices should be installed at a minimum distance of 9.05" (23 cm) from your body.



Hardware Component Descriptions

Status Light

The status light conveys operational states for system power, firmware updates, Ethernet and wireless interface activity, and major alarms. The AP245X has a rectangular status light bar on the top corner and down one side of the chassis. The colors of this light bar indicate the following states of activity:

Dark: There is no power or the status indicator is disabled.

Amber (flashing): This is an alert that indicates that the device is performing a firmware upgrade. Do not power off the device during this process.

Amber (steady): This is an alert that indicates that the CAPWAP connection has not been successfully established, or the device is booting or shutting down.

White: The device is powered on, a successful CAPWAP connection has been made, and the firmware is operating normally. During normal operation, the LED produces a slow blink consisting of 4 seconds of illumination followed by one minute of darkness. To extend the life of the status LED, turn it off completely for normal use, and turn it on when needed for troubleshooting. To turn the LED off, establish a console connection with the device and enter the following CLI command:

```
system led brightness off
```

To turn the LED on and select the level of brightness, enter the following CLI command:

```
system led brightness [bright | soft | dim]
```

Console Port

The Console port is located on the bottom of the device. Use this port to make a serial connection between your management system and the AP. The management station from which you connect to the device must have a VT100 emulation program, such as Tera Term Pro © (a free

terminal emulator) or Hilgraeve HyperTerminal ® (provided with Windows ® operating systems from XP forward). The serial connection settings are: 9600 bits per second, 8 data bits, no parity, 1 stop bit, no flow control.

The pin-to-signal mapping for the Console port is shown in "[Aerohive Device Pin Assignments](#)".

Ethernet Ports

The AP245X has two RJ45 10/100/1000Base-T/TX Ethernet ports (ETH0 and ETH1) that automatically negotiate half- and full-duplex connections with the connecting device. The ports are autosensing and adjust to straight-through and crossover standard Cat3, Cat5, Cat5e, or Cat6 Ethernet cables automatically. The APs receive power through an Ethernet connection to the ETH0 port from [PSE](#) (power sourcing equipment) that is compatible with the 802.3at and 802.3af standards.

PSE can be embedded in a switch or router, or it can come from purpose-built devices that inject power into the Ethernet line en route to the AP. Because the PoE ports have autosensing capabilities, the wiring termination in the Ethernet cable can be either straight-through or crossover.

You can purchase your own PoE injector or purchase the following 20 W and 30 W PoE injectors as optional accessories from Aerohive (not available in Brazil):

- AH-ACC-INJ-20W-EU
- AH-ACC-INJ-30W-EU
- AH-ACC-INJ-20W-US
- AH-ACC-INJ-30W-US
- AH-ACC-INJ-20W-AU
- AH-ACC-INJ-30W-AU
- AH-ACC-INJ-20W-IL
- AH-ACC-INJ-30W-IL

Reset Button

Use the Reset button to reset the device or restore the factory default settings. Insert a paper clip or similar tool into the Reset pinhole and press the button. To reboot the device, press the button for 5 seconds. To return the configuration to the factory default settings, press it for at least 10 seconds. After releasing the button, the indicator light goes dark, and then glows steady amber while the firmware loads and the system performs a self-test. After the software finishes loading and the AP has connected to the HiveManager management system, the status indicator glows steady white.

To disable the reset button from resetting the configuration, enter this command: **no reset-button reset-config-enable** . When this command is enabled, pressing the button for 5 seconds will still reboot the AP, but pressing it for more than 10 seconds will not reset its configuration.

USB Port

The AP245X has one USB port that is protected by a port cover. To access the port, remove the screw that secures the cover in place. For extra protection, keep the cover in place when the port is not in use.

Antennas

You must provide 6 dual-band 5 dBi articulated indoor antennas for the AP245X. You can order the following antenna kits from Aerohive:

SKU	Description
AH-ACC-ANT-DB-5	One dual band RP-SMA female indoor 5 dBi articulated antenna for the AP245X.
AH-ACC-DB-5-ANT-KIT	AP245X articulated indoor antenna kit (six dual band 5 dBi antennas).
AH-ACC-120-ANT-KIT	120 degree dual-band 5 dBi sector antenna for AP245X with three RP-SMA connectors. Kit includes three 2.5" (75 cm) coaxial cables and mounting assembly.
AH-ACC-60-ANT-KIT	60 degree dual-band (5.5 dBi/6 dBi for 2.4 GHz/5 GHz) sector antenna for AP245X with three RP-SMA connectors. Kit includes three 2.5" (75 cm) coaxial cables and mounting assembly.

Locking Slot

When mounting the AP on a ceiling track or flat surface, you can secure it to the track using a Kensington® lock in the lock slot or using a security bracket (shipped separately). See "Securing the AP245X".

Hardware Specifications

The following specifications describe the physical features and hardware components, PoE electrical requirements, and the temperature and humidity ranges in which the devices can operate.

Device Specifications

- Chassis dimensions: 7.25" W x 2.12" H x 7.25" D (184 mm W x 54 mm H x 184 mm D)
- Weight: 1.6 lb (0.73 kg)
- Six external dual band antennas, and one internal BLE antenna
- One RJ45 Console port (9600 bits per second, 8 data bits, no parity, 1 stop bit, no flow control)
- Eth0 Ethernet port: autosensing 10/100/1000Base-T/TX Mbps, with IEEE 802.3af- or 802.3at-compliant PoE
- Eth1 Ethernet port: autosensing 10/100/1000Base-T/TX Mbps

Power Specifications

- IEEE 802.3af PoE Power: Full 3x3:3 802.11ac MU-MIMO performance, BLE and Dual 5 GHz. No USB port, no 2nd Ethernet port.
- IEEE 802.3at PoE Power: all of the above plus USB port and 2nd Ethernet port.
- 802.3af PoE-capable Gigabit Ethernet port
- PoE nominal input voltages: 48 V
- RJ45 power input pins: Wires 4, 5, 7, 8 or 1, 2, 3, and 6

Environmental Specifications

- Operating temperature: 32 to 104° F (0 to 40° C)
- Storage temperature: -40 to 185° F (-40 to 85° C)
- Relative Humidity: 5% to 95% RH (noncondensing)

Copyright © 2016, Aerohive Networks, 1101 McCarthy Blvd, Milpitas, CA 95035